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FEDERAL - STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for

Oregon

By

Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Oregon Agricultural Experiment Station

MAR 25 1951
U. S. DEPARTMENT OF AGRICULTURE

As of

MAR. 1, 1951

Data included in this report were obtained by the agencies named above in cooperation with the Oregon State Engineer, U. S. Forest Service, National Park Service and other Federal, State and local organizations.

FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR

OREGON

Report Prepared

by

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and
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Division of Irrigation
Soil Conservation Service
and
Oregon Agricultural Experiment Station
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INDEX TO SNOW COURSES

Number	Name	Elev.
	UPPER COLUMBIA DRAINAGE Lower Snake in Oregon	
	OWYHEE RIVER	
Nev. 6	Big Bend	6800
Nev. 1	Buckskin, Lower	6800
Nev. 2	Buckskin, Upper	8200
952	Fish Creek	7900
Nev. 7	Fry Canyon	6800
Nev. 5	Gold Creek Ranger Sta.	6600
Nev. 4	Granite Peak	8600
Nev. 9	Jack Creek, Lower	7000
Nev. 10	Jack Creek, Upper	7800
Nev. 3	Martin Creek	7000
Nev. 8	Rodeo Flat	7000
Ida. 12	Silver City	6400
951	Silvies	6900
Ida. 13	South Mountain No. 22	6340
Nev. 12	Taylor Canyon	5200
	MALHEUR RIVER	
133	Blue Mountain Spring	5900
137	Crane Prairie	5375
136	Lake Creek	5120
134	Rock Spring	5100
135	Stinking Water	4800
	BURNT RIVER	
143	Barney Creek	5950
141	Blue Mountain Summit	5098
156	Dooley Mountain	5430
142	Tipton	5100
	POWDER RIVER	
155	Anthony Lake	7125
154	Bourne	5800
156	Dooley Mountain	5430
151B	Eilertson Meadows	5400
249	Gold Center	5340
157	Goodrich Lake	6775
184	Summit Springs	6000
185	Taylor Green	5740
	PINE CREEK	
161	Schneider Meadows	5400
	INNAHA RIVER	
171	Coverdale	4250
	GRANDE RONDE RIVER	
183	Aneroid Lake	7480
183A	Aneroid Lake No. 2	7000
155	Anthony Lake	7125
188	Beaver Reservoir	5340
187	Camp Carson	5970
186A	Moss Spring	5850
184	Summit Springs	6000
185	Taylor Green	5740
212	Tollgate	5070

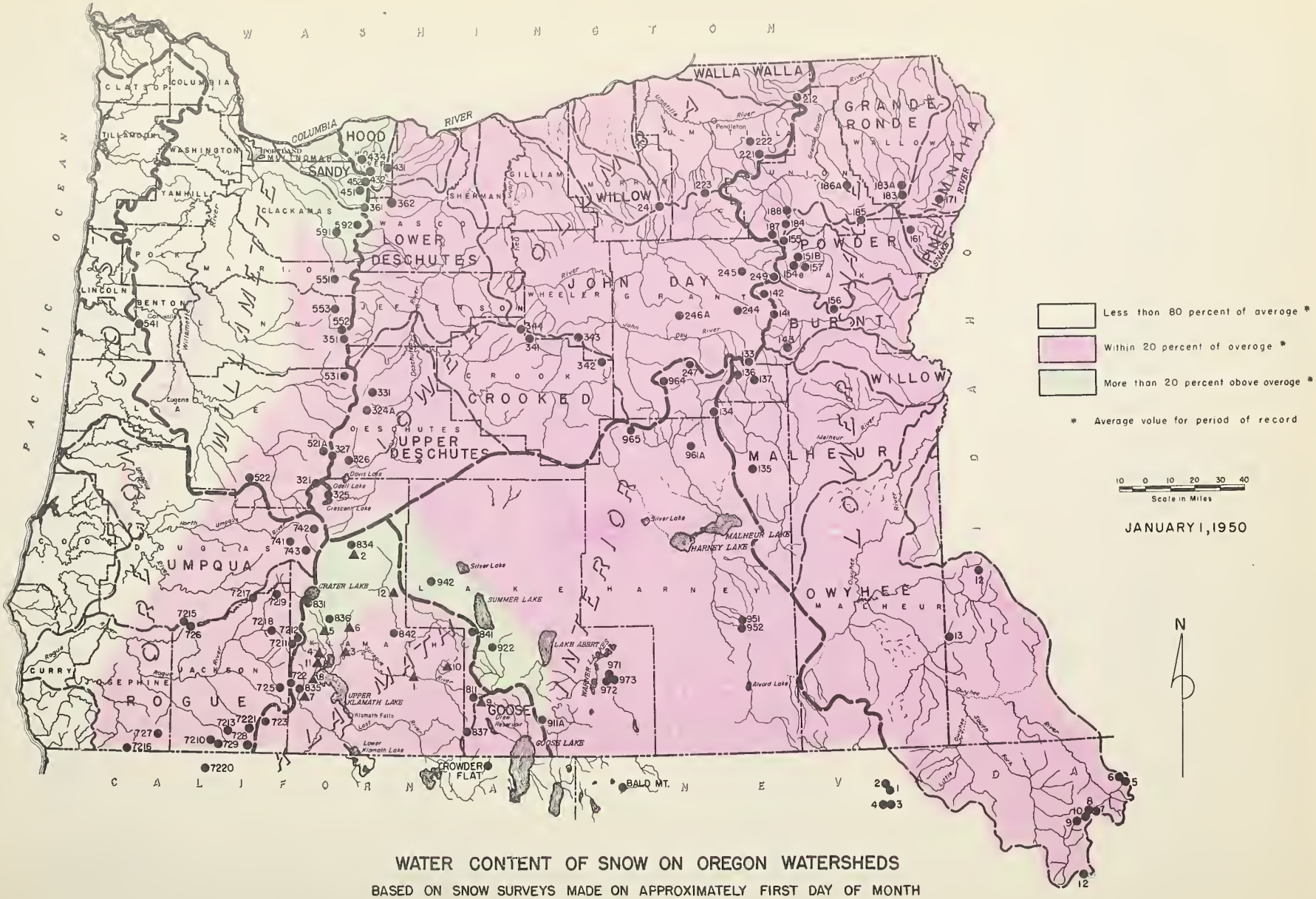
Number	Name	Elev.
	LOWER COLUMBIA DRAINAGE	
	WALLA WALLA RIVER	
212	Tollgate	5070
	UMATILLA RIVER	
222	Emigrant Springs	3925
223	Lucky Strike	5050
221	Meacham	43900
212	Tollgate	5070
	WILLOW CREEK	
241	Arbuckle Mountain	5400
	JOHN DAY RIVER	
241	Arbuckle Mountain	5400
246A	Beech Creek Summit	4800
133	Blue Mountain Spring	5900
141	Blue Mountain Summit	5098
244	Dixie Springs	6650
249	Gold Center	5340
964	Izee Summit	5293
245	Olive Lake	6000
965	Snow Mountain	6300
247B	Starr Ridge	5150
	DESCHUTES RIVER	
326	Caldwell Ranch	4400
321	Cascade Summit	4880
327	Charlton Lake	5750
361	Clear Lake	3500
325	Crescent Lake	4760
343	Derr	5670
351	Hogg Pass	4755
344	Marks Creek	4540
324A	New Dutchman Flat	6400
341	Oohoo Meadows	5200
362	Rock Creek	4200
965	Snow Mountain	6300
342	Tamarack	4800
331	Three Creeks Meadows	5600
	HOOD RIVER	
431	Brooks Meadows	4300
434	Red Hill	4400
432	Tilly Jane-Mt. Hood	6000
	SANDY RIVER	
361	Clear Lake	3500
452	Phlox Point-Mt. Hood	5600
451	Still Creek	3700
	CLACKAMAS RIVER	
592	Clackamas Lake	3400
591	Peavine Ridge	3500

Number	Name	Elev.
	WILLAMETTE RIVER	
551	Breitenbush	2325
321	Cascade Summit	4880
522	Champion	4500
327	Charlton Lake	5750
351	Hogg Pass	4755
531	McKenzie	4800
553	Marion Forks	2730
541	Mary's Peak	3620
552	Santiam Junction	3990
521A	Waldo Lake	5500
	KLAMATH LAKE BASIN	
831	Annie Spring	6018
722	Billie Creek Divide	6000
834	Chemult No. 1	4760
Calif.	Crowder Flat	5200
723	Hyatt Prairie Reservoir	4900
835	Lake of the Woods No. 1	4960
811	Quartz Mountain	5320
7211	Seven Lakes No. 1	6800
7212	Seven Lakes No. 2	6200
837	Strawberry	5600
841	Summer Rim	7200
836	Sun Mountain	5350
842	Taylor Butte	5100
	GOOSE LAKE BASIN	
911A	Camas Creek	5720
811	Quartz Mountain	5320
837	Strawberry	5600

INDEX TO THE CALIFORNIA OREGON POWER COMPANY SNOW WATER STATIONS

	KLAMATH LAKE BASIN	
1	Beatty	4300
2	Chemult	4761
3	Chiloquin	4187
4	Crystal	4200
5	Fort Klamath	4150
6	Kirk	4533
7	Lake of the Woods	4960
8	Pelican	4200
9	Quartz Mountain	5504
10	Richardson Ranch	4800
12	Yamsey	4600
	GOOSE LAKE BASIN	
9	Quartz Mountain	5504

Number	Name	Elev.
	INTERIOR DRAINAGE	
	SILVER LAKE	
942	Silver Creek	4900
	CHEWAUCAN RIVER	
922	Mill Creek	6200
	HARNEY BASIN	
973	Deer Creek	6670
952	Fish Creek	7900
971	Hart Mountain	6350
961A	Idylwild Park	5200
964	Izee Summit	5293
134	Rock Spring	5100
951	Silvies	6900
965	Snow Mountain	6300
247B	Starr Ridge	5150
	WARNER LAKE	
911A	Camas Creek	5720
	CUANO LAKE	
Nev.	Bald Mountain	6720
972	Cuano Creek	6480
	WEST COAST DRAINAGE	
	UMPQUA RIVER	
522	Champion	4500
743	Diamond Lake	5315
726	Goolaway Cap	3000
7215	Coolaway Mountain	3730
742	N.Umpqua near Lake Creek	4215
741	Trap Creek	3800
7217	Whaleback	5140
	ROGUE RIVER	
7216	Althouse	4400
831	Annie Spring	6018
729	Big Red Mountain	6500
722	Billie Creek Divide	6000
725	Fish Lake	4865
726	Goolaway Gap	3000
7215	Goolaway Mountain	3730
727	Grayback Peak	6000
7221	Hobart Lake	5010
723	Hyatt Prairie Reservoir	4900
7210	Little Red Mountain	6500
7220	Scragg Mountain	6200
7211	Seven Lakes No. 1	6800
7212	Seven Lakes No. 2	6200
7219	Silver Burn	3720
728	Siskiyou Summit	4630
7218	South Fork Canal	3500
7213	Wagner Butte	6900
7217	Whaleback	5140



WATER CONTENT OF SNOW ON OREGON WATERSHEDS

BASED ON SNOW SURVEYS MADE ON APPROXIMATELY FIRST DAY OF MONTH

(Valley Lands Not Necessarily Included)

UNITED STATES DEPARTMENT OF AGRICULTURE — REGION 7 — SOIL CONSERVATION SERVICE

7-1-8563

March 1, 1951

PRELIMINARY WATER SUPPLY OUTLOOK

Oregon's 1951 water supply outlook is generally "good" to "excellent" except for the Malheur, Silvies, Burnt, Grande Ronde, Umatilla, Illinois, Applegate and smaller Rogue watersheds where snow cover is still below average in water content. Although snow accumulation during February was below average, several new storms have improved the situation since March 1. Reservoired water supplies are generally "good" to "excellent" except in the Warmsprings, Agency Valley, Clear Lake and Hyatt reservoirs which now hold "fair" supplies.

Water content of mountain snow cover, as of March 1, averages 103 percent normal for the state as a whole with heaviest accumulations in the Cascades. Water content of snow below 5000 feet was 98 percent average on the first of the month but has been increased somewhat by recent storms. This low elevation snow is still only 67 percent of that on the ground at this date a year ago. Snow above 5000 feet now contains the same amount of water as last year and 101 percent of average.

Watershed soils throughout the state are extremely wet and will require little or no "priming" with snow melt water to produce immediate runoff in most areas. The result should be to increase the total value of this year's runoff.

Total water stored in all reservoirs is 38 percent more than last year, 48 percent more than in 1949 and 20 percent more than average. Fourteen out of 23 important reservoirs are half full or better. Reservoirs in the Owyhee, Umatilla, Deschutes and Goose Lake area are especially well filled. Water is being spilled at several reservoirs in these areas.

A tabulation of preliminary stream flow forecasts is presented on pages 2 and 3 of this report. Final forecasts and additional snow survey data will be published on April 9th.

PRELIMINARY STREAMFLOW FORECASTS, MARCH 1, 1951

The following preliminary runoff forecasts are based on present mountain snow cover and on the assumption that average increase of snow cover will occur during March. Greater or less than average increase in mountain snow cover during March will correspondingly modify these estimates:

BASIN AND STREAM	Apr.-Sept.,inc. Streamflow in Thous.A.F. Forecast 1951	Measured Runoff 1950	1949	1948	10-yr.Avg. 1940-49
NORTHCENTRAL OREGON					
Hood River,W.Fk. near Dee	182.0	228.6	225.1	158.1	142.4
Hood R. at Powerdale plus Power Canal	385.0	497.6	483.2	338.9	289.5
White R. below Tygh Valley	200.0	a	265.6	177.0	139.6
UMATILLA-WALLA WALLA					
Walla Walla R.So.Fk. nr. Milton	63.0	a	84.6	102.1	68.6
Umatilla R. near Gibbon	66.0	106.7	110.1	148.7	87.7
Umatilla R. at Pendleton	120.0	a	212.9	311.3	171.3
McKay Cr. above McKay Reservoir	20.0	a	22.7	63.4	29.6
NORTHEASTERN OREGON					
Grande Ronde R. nr. LaGrande	120.0	a	191.5	366.2	182.2
Catherine Creek near Union	55.0	a	73.0	109.9	70.2
Bear Creek near Wallowa	70.0	a	73.6	93.5	70.5
Lostine R. near Lostine	128.0	a	130.2	153.5	122.9
Hurricane Cr. near Joseph	44.0	a	48.6	59.4	45.2
Wallowa R. E. Fk. plus Power Pl.	11.2	a	11.3	15.7	11.3
Imnaha River at Imnaha	330.0	a	254.0	451.2	295.7
Powder River at Salisbury	75.0	a	70.0	78.6	62.3
Burnt R. nr. Hereford (Natural Flow)	50.0	a	47.0	62.7	40.3
EASTERN OREGON					
Malheur R. Mid. Fk. nr. Drewsey	72.0	a	68.5	74.0	75.1
Malheur R. N. Fk. at Beulah	61.0	a	56.5	64.4	60.3
Owyhee R. above Owyhee Reservoir	540.0	400.4	530.5[c]	280.6[c]	492.9[c]
John Day R. at Prairie City, combined with Power Canal	50.0	a	44.9	91.4	51.8
John Day R. Mid. Fk. at Ritter	130.0	a	123.2	223.7	121.4
John Day R. No. Fk. near Dale	260.0	a	288.2	425.0	228.8
Strawberry Cr. nr. Prairie City	8.0	a	8.3	11.0	8.4
HARNEY BASIN					
Silvies R. near Burns	66.0	a	79.1	133.1	94.2
CENTRAL OREGON					
Ochoco Reservoir Net Inflow	20.0	a	33.3	72.3	27.8
Crescent Lake Net Inflow	24.0	a	29.4	27.4	16.2

a - Discharge data not available
c - March-July rather than April-September

(Continued)

BASIN AND STREAM	Apr.-Sept., inc. Streamflow in Thous. A.F. Forecast 1951	Measured Runoff 1950	1949	1948	10-yr. Avg. 1940-49
CENTRAL OREGON (Continued)					
Odell Creek near Crescent	32.0	a	34.9	34.7	26.8
Tumalo Creek and C. S. Canal	55.0	a	58.1	53.2	45.4
Squaw Creek near Sisters	58.0	a	50.8	56.5	45.0
SOUTHCENTRAL OREGON					
Deep Creek Above Adel	80.0[b]	a	71.4[b]	70.8[b]	60.4[b]
KLAMATH BASIN					
Upper Klamath Lake Net Inflow	487.0[d]	423.1	396.7[d]	461.5[d]	463.6[d]
Gerber Reservoir Net Infow	46.5[d]	a	40.4[d]	26.8[d]	36.3[d]
SOUTHERN OREGON					
Hyatt Reservoir Net Inflow	4.2	a	7.6	9.1	5.5
Fourmile Lake Net Inflow	7.3	a	8.5	11.0	7.5
Little Butte Cr.N.Fk. below Fish Lake (Natural Flow)	13.0	a	18.9	16.2	13.4
Rogue R.N.Fk. above Prospect	335.0	387.6	375.5	343.7	287.2
Clearwater River above Trap Creek	60.0	a	71.8	67.4	59.8
No Umpqua R. below Lake Creek	156.0	a	183.0	174.3	154.2
WILLAMETTE VALLEY					
Willamette R.Mid Fk. at Eula	920.0	a	1019.2	1025.9	755.0
McKenzie R. at McKenzie Bridge	650.0	771.8	716.4	646.4	525.4
McKenzie River near Vida	1350.0	1725.2	1516.7	1419.5	1116.7
Clackamas R. at Big Bottom	200.0	a	177.5	231.1	151.0
Clackamas R. near Cazadero	830.0	a	1159.0	843.6	732.6

a - Discharge data not available
b - April-June rather than April-September
d - March-June rather than April-September

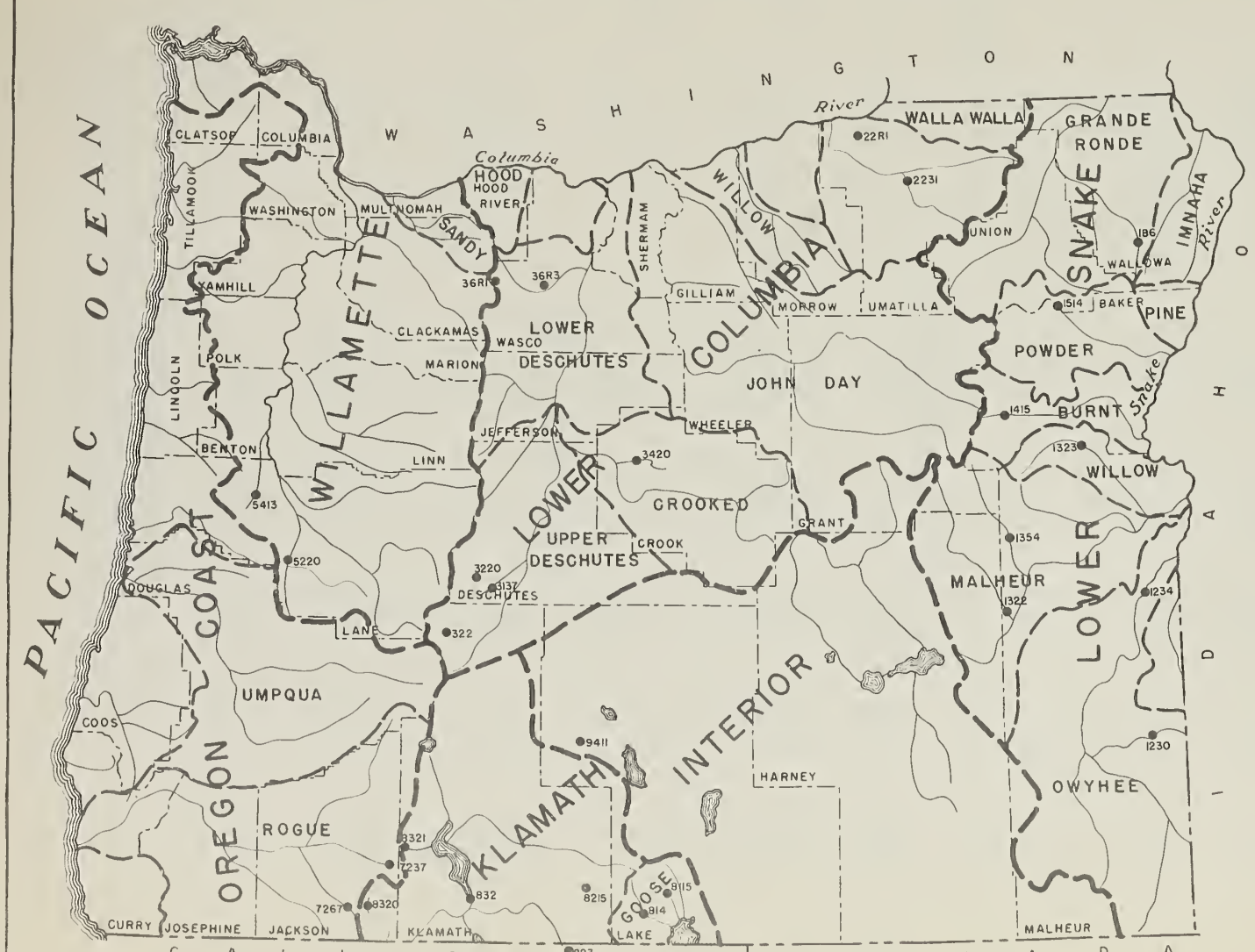
STATUS OF SNOW COVER AS OF MARCH FIRST
Summary of Snow Survey Data
By Watersheds as of About March First

Stream Basin	Number of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches) 1951	1950	1949	Avg. Past yrs. of record	Yrs. of Record	1951 Snow Water Depth (Inches) as percent of that in 1950	1949	Avg.
Owyhee River	14	7.6	5.6				136		
	14	7.6		10.9				70	
	14	7.6			7.8	(11-23)			97
Malheur River	6	8.4	8.8				95		
	6	8.4		11.6				72	
	6	8.4			8.8	(6-15)			95
Burnt River	3	8.2	8.3				99		
	3	8.2		12.3				67	
	3	8.2			8.5	(6-15)			96
Powder River	4	17.6	15.5				114		
	4	17.6		21.5				82	
	4	17.6			14.7	(11-14)			120
Imnaha River	2	28.7	30.9				93		
	2	28.7		35.2				82	
	2	28.7			26.5	(7)			108
Grande Ronde River	7	19.4	22.0				88		
	7	19.4		31.6				61	
	8	17.5			18.6	(4-14)			94
Walla Walla River	1	22.7	26.0				87		
	1	22.7		44.9				51	
	1	22.7			25.3	(12)			90
Umatilla River	5	11.6	14.5				80		
	5	11.6		23.5				49	
	5	11.6			13.1	(9-14)			88
Willow Creek	1	11.7	11.5				102		
	1	11.7		15.3				76	
	1	11.7			10.6	(9)			110
John Day River	10	10.4	10.8				96		
	10	10.4		14.4				72	
	11	9.8			9.4	(4-15)			104
Deschutes River	6	31.0	34.6				90		
	6	31.0		41.4				75	
	6	31.0			26.0	(4-14)			119
Crooked River	3	7.9	8.6				92		
	3	7.9		10.3				77	
	3	7.9			6.8	(8-15)			116
Hood River	3	33.6	51.1				66		
	2	40.7		72.4				56	
	3	33.6			44.0	(2-3)			76

Stream Basin	Number of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches) 1951	1950	1949	Avg. Past yrs. of record	Yrs. of Rec-ord	1951 Snow Water Depth (Inches) as percent of that in 1950	1949	Avg.
Sandy River	3	34.2	44.2				77		
	3	34.2		59.7				57	
	3	34.2			28.1	(9-13)			122
Clackamas River	3	16.9	26.2				64		
	3	16.9		33.1				51	
	3	16.9			14.0	(9-13)			121
Willamette River	9	28.6	40.0				72		
	10	26.2		46.8				56	
	10	26.2			23.0	(6-13)			114
Silver Lake Basin	1	3.9	2.8				139		
	1	3.9		3.8				103	
	1	3.9			2.8	(11)			139
Chewaucan River	3	10.1	9.5				106		
	3	10.1		10.6				95	
	3	10.1			8.3	(11-12)			122
Warner Lake	1	12.1	8.3				146		
	1	12.1		12.8				94	
	1	12.1			8.3	(7)			146
Guano Lake	1	4.0	1.1				363		
	1	4.0		5.0				80	
	1	4.0			3.5	(11)			114
Harney Basin	5	5.8	6.0				97		
	5	5.8		8.1				72	
	5	5.8			6.1	(12-15)			95
Umpqua River	3	22.9	32.2				71		
	3	22.9		39.0				59	
	3	22.9			24.4	(3-22)			94
Upper Rogue River	12	22.4	25.6				88		
	11	23.7		33.1				72	
	12	22.4			22.7	(3-18)			99
Applegate River	4	14.6	21.0				70		
	2	13.1		24.4				54	
	4	14.6			16.2	(2-13)			90
Illinois River	2	8.0	18.8				42		
	2	8.0		18.2				44	
	2	8.0			11.0	(9-12)			73
Klamath Lake Basin*	19	16.6	15.2				109		
	20	15.8		19.2				82	
	20	15.8			14.3	(1-24)			110
Goose Lake Basin*	3	8.4	7.3				115		
	3	8.4		11.1				76	
	3	8.4			7.4	(7-12)			114

* Including Copco water measurement stations.

IMPORTANT OREGON RESERVOIRS



RESERVOIR NAME	NUMBER
Agency Valley	1354
Antelope	1230
Clear Lake	823
Clear Lake	36R1
Cold Springs	22R1
Cottage Grove	5220
Cottonwood	8115
Crane Prairie	3220
Crescent Lake	322
Drew Creek	814
Emigrant Gap	7267
Fern Ridge	5413
Fish Lake	7237
Four Mile Lake	8321
Gerber	8215
Hyatt Prairie	8320
McKay	2231
Ochoco	3420
Owyhee	1234
Rock Creek	36R3
Thief Valley	1514
Thompson Valley	9411
Unity	1415
Upper Klamath Lake	832
Wallowa Lake	186
Warm Springs	1322
Wickiup	3137
Willow Creek No. 3	1323

25 0 25 50

SCALE IN MILES

1-27-43

U S DEPT OF AGRICULTURE

SOIL CONSERVATION SERVICE

7-L-3060

STATUS OF RESERVOIR STORAGE ABOUT MARCH 1, 1951

BASIN and STREAM	RESERVOIR	USABLE CAPACITY (Thous.A.F.)	THOUSANDS ACRE FEET IN STORAGE ABOUT MAR. 1 1951	1950	1949	1948	10-Yr.Avg. 1940-49
		UPPER COLUMBIA DRAINAGE					
		LOWER SNAKE IN OREGON					
Owyhee	Antelope	36.5	22.0	9.0	1.8	7.0	8.8
	Owyhee	715.0	652.6	429.8	294.9	349.1	500.9
Malheur	Warm Springs	191.0	55.0	17.8	54.9	33.8	103.2
	Agency Valley	60.0	21.6	22.4	40.7	40.7	43.5
Burnt	Unity	25.2	12.7	3.2	8.5	7.3	10.2
Powder	Thief Valley	17.4	N.R.	N.R.	9.2	17.4	15.4
Grande Ronde	Wallowa Lake	40.9	18.2	12.2	19.0	17.6	20.3
		LOWER COLUMBIA DRAINAGE					
Umatilla	McKay	74.0	62.6	45.7	42.8	66.6	47.9
	Cold Springs	50.0	46.6	35.6	55.0	45.6	39.4
Deschutes	Ochoco	46.0	43.4	6.3	25.8	24.7	21.1
	Crescent Lake	54.9	N.R.	52.8	52.9	46.8	38.1
	Crane Prairie	55.3	54.8	40.0	54.7	36.7	34.6[d]
	Wickiup	180.0	186.0	186.9	178.3	134.6	73.7[d]
Willamette	Cottage Grove	30.1[b]	9.0	9.2	6.7	9.2	6.4[d]
	Fern Ridge	94.2[b]	31.5	26.4	62.8	38.2	29.3[e]
	Dorena	70.5[b]	17.0	26.9	-	-	-
		WEST COAST DRAINAGE					
Rogue	Fish Lake	7.8	5.8	4.7	5.1	3.4	4.4
	Fourmile Lake[a]	16.1[a]	11.8	7.3	7.2	2.3	5.8
	Emigrant Gap	8.3	7.3	6.6	6.7	8.3	6.6
	Hyatt Prairie[a]	16.2[a]	5.9	4.1	7.5	3.2	5.1
Klamath	Upper Klamath Lake	584.0[c]	481.2	343.6	303.4	310.7	368.5
	Gerber	94.0	42.6	26.5	12.9	23.2	36.8
	Clear	440.2	124.5	122.2	138.1	146.7	234.2
Goose Lake	Cottonwood	4.1	1.4	0.8	0.0	0.3	0.6[f]
	Drew	62.5	60.0	40.1	38.0	24.6	36.7[f]

N.R. - No Report
a - By ditch to Rogue River side from Klamath Drainage
b - Storage space reserved for flood control
c - Based on gage zero elevation of 4135.0
d - 1943-49
e - 1942-49
f - Excl. 1942

VALLEY PRECIPITATION[a]

DRAINAGE DIVISIONS	CURRENT YEAR Oct. 1, 1950 - Mar. 1, 1951		LAST YEAR Oct. 1, 1949 - Mar. 1, 1950	
	P	D	P	D
Southeastern	6.20	+1.22	4.75	- .83
Southcentral	8.07	+2.74	3.53	-1.96
Central	10.02	+3.79	11.11	+2.13
Columbia River	15.05	+5.43	10.30	+ .62
Wallowa Mountains	8.69	-0.19	7.85	- .01
Blue Mountains	8.67	+ .65	8.57	- .04
Southern	25.60	+10.28	15.24	- .59
Willamette Valley	52.60	+18.23	40.58	+6.98

P - Inches Precipitation D - Inches Departure from Normal

Southeastern - Malheur and Owyhee drainages.

Southcentral - Interior Basin Drainages and Goose Lake.

Central - Deschutes and Crooked drainages.

Columbia River Lower valleys of the Walla Walla, Umatilla, John Day, Deschutes and Hood River drainages.

Wallowa Mountains - Imnaha, Wallowa, Catherine, Eagle and Pine drainages.

Blue Mountains - Upper valleys of the Burnt, Powder, Grande Ronde, Umatilla, Walla Walla, John Day, Silvies and Malheur drainages.

Southern - Umpqua, Rogue and Klamath drainages.

Willamette Valley - All Willamette drainages.

a - Preliminary data computed from Weather Bureau records.

DRAINAGE BASIN and SNOW COURSE	LOCATION					Date of Survey	Snow Depth (In.)	SNOW COVER MEASUREMENTS Water Content (In.)			Past Record	
									Same Approx. Date			
	Number or State	Sec.	Twp.	Range	Elev.			1951	1950	1949	Years of Record	Av. Water Content (Inches)
U P P E R C O L U M B I A D R A I N A G E												
L O W E R S N A K E I N O R E G O N												
OWYHEE RIVER												
Big Bend	Nev.	6	30	45N	56E	6700	2-27	37.6	*11.1	8.4	14.3	22	9.0
Disaster Peak	Nev.	6	8	47N	34E	6500	No Report			6.3	12.7	2	9.5
Fry Canyon	Nev.	7	32	43N	54E	6800	2-28	27.8	* 7.8	7.0	15.2	17	9.1
Gold Cr. Ranger Sta.	Nev.	5	31	45N	56E	6600	2-27	23.6	* 7.2	5.4	10.5	19	6.6
Granite Peak	Nev.	4	22	44N	39E	7800	2-27	48.5	*13.9	9.3	7.6	19	9.4
Lower Buckskin	Nev.	1	25	45N	39E	6700	2-26	39.6	11.3	7.8	13.0	17	8.7
Lower Jack Creek	Nev.	9	18	42N	53E	6800	3-1	7.5	* 0.9	0.0	4.9	23	4.7
Martin Creek	Nev.	3	18	44N	40E	6700	2-25	34.3	9.2	7.3	7.5	19	7.8
Midas	Nev.	6	18	39N	46E	7200	3-1	19.8	5.7	2.5	9.2	11	5.1
Rodeo Flat	Nev.	8	36	43N	53E	6800	2-28	26.6	* 8.8	7.1	17.2	17	10.0
Silver City	Idaho		6	5S	3W	6400	No Report		•	13.0	19.3	6	13.4
South Mountain No. 2	Idaho		35	7S	5W	6340	3-1	31.0	* 9.0	8.8	16.6	11	11.1
Taylor Canyon	Nev.	12	35	39N	53E	6200	2-28	10.5	* 2.4	2.3	8.8	16	5.8
Tremewan Ranch	Nev.	11	9	39N	55E	5700	2-28	3.9	* 0.7	0.0	6.0	19	2.7
Upper Buckskin	Nev.	2	11	45N	39E	7200	2-26	29.1	8.0	6.0	8.7	17	10.0
Upper Jack Creek	Nev.	10	9	42N	53E	7250	3-1	35.4	* 9.9	6.8	13.1	15	9.8
MALHEUR RIVER													
Barney Creek		143	16	14S	36E	5950	2-26	21.6	5.6	8.7	10.8	6	7.9
Blue Mtn. Spring		133	21	15S	35E	5900	2-27	47.8	16.5	14.4	19.1	15	14.6
Crane Prairie		137	24	16S	34E	5375	2-26	30.6	8.8	8.6	13.9	12	9.2
Lake Creek		136	10	16S	33½E	5120	2-26	36.7	10.6	9.4	12.7	12	10.2
Rock Spring		134	23	18S	32E	5100	2-25	19.7	5.0	5.6	8.6	15	6.5
Stinking Water		135	33	21S	34E	4800	2-27	10.8	4.0	6.3	4.7	12	4.4

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OREGON SNOW SURVEYS, MARCH, 1951

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
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	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1951	1950	1949	Years of Record	Av. Water Content (Inches)
BURNT RIVER												
Barney Creek	143	16	14S	36E	5950	2-26	21.6	5.6	8.7	10.8	6	7.9
Blue Mtn. Summit	141	6	12S	36E	5098	2-28	29.8	9.3	8.3	13.8	15	8.8
Dooley Mountain	156	32	11S	40E	5430	2-28	27.1	9.6	7.8	12.2	12	8.8
POWDER RIVER												
Anthony Lake	155	18	7S	37E	7125	3-3	75.0	*21.9	24.0	36.3	11	24.0
Bourne	154	33	8S	37E	5800	3-1	54.0	25.6	16.5	21.5	14	14.1
Dooley Mountain	156	32	11S	40E	5430	2-28	27.1	9.6	7.8	12.2	12	8.8
Eilertson Meadows	151B	18	8S	38E	5400	Measurement Delayed			10.7	16.5	13	11.1
Gold Center	249	21	9S	36E	5340	2-28	36.3	13.4	13.8	16.1	11	11.8
Goodrich Lake	157	34&35	8S	38E	6775	Measurement Delayed			36.7	42.6	4	35.1
PINE CREEK												
Schneider Meadows	161	35	6S	45E	5400	2-27	73.2	24.7	- -	- -	--	- -
IMNAHA RIVER												
Aneroid Lake #1	183	16	4S	45E	7480	3-4	107.0	31.3	35.8	37.4	7	29.6
Aneroid Lake #2	183A	16	4S	45E	7000	3-4	82.4	26.1	26.0	33.0	7	23.4
GRANDE RONDE RIVER												
Aneroid Lake #1	183	16	4S	45E	7480	3-4	107.0	31.3	35.8	37.4	7	29.6
Aneroid Lake #2	183A	16	4S	45E	7000	3-4	82.4	26.1	26.0	33.0	7	23.4
Anthony Lake	155	18	7S	37E	7125	3-3	75.0	*21.9	24.0	36.3	11	24.0
Beaver Reservoir	188	8	5S	37E	5340	3-1	34.7	8.9	9.2	16.7	12	11.2

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GRANDE RONDE RIVER (Cont'd.)												
Meacham	221	24&25	1S	35E	4300	2-26	22.0	7.0	12.0	20.6	14	9.9
Moss Spring	186A	28	3S	41E	5850	3-1	55.8	17.6	20.7*	32.1	12	21.1
Schoolmarm	248	28	4S	34E	4775	2-28	15.0	4.6	- -	- -	4	3.9
Tollgate	212	32	4N	38E	5070	2-26	59.4	22.7	26.0	44.9	12	25.3
L O W E R C O L U M B I A D R A I N A G E												
WALLA WALLA RIVER												
Tollgate	212	32	4N	38E	5070	2-26	59.4	22.7	26.0	44.9	12	25.3
UMATILLA RIVER												
Arbuckle Mountain	241	33	4S	29E	5400	2-26	32.8	11.7	11.5	15.3	9	10.6
Emigrant Springs	222	29	1N	35E	3925	2-26	15.8	4.3	8.4	19.0	14	7.7
Lucky Strike	223	28	3S	32E	5050	2-27	40.1	12.5	14.8	17.7	12	12.0
Meacham	221	24&25	1S	35E	4300	2-26	22.0	7.0	12.0	20.6	14	9.9
Tollgate	212	32	4N	38E	5070	2-26	59.4	22.7	26.0	44.9	12	25.3
WILLOW CREEK												
Arbuckle Mountain	241	33	4S	29E	5400	2-26	32.8	11.7	11.5	15.3	9	10.6
JOHN DAY RIVER												
Arbuckle Mountain	241	33	4S	29E	5400	2-26	32.8	11.7	11.5	15.3	9	10.6
Beech Creek Summit	246A	4	12S	30E	4800	3-3	22.1	5.2	9.1	8.7	14	6.3
Blue Mountain Springs	133	21	15S	35E	5900	2-27	47.8	16.5	14.4	19.1	15	14.6
Blue Mountain Summit	141	6	12S	36E	5098	2-28	29.8	9.3	8.3	13.8	15	8.8
Gold Center	249	21	9S	36E	5340	2-28	36.3	13.4	13.8	16.1	11	11.8

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JOHN DAY RIVER (Cont'd.)												
Izee Summit	964	28	16S	29E	5293	3-2	33.4	9.0	7.3	10.9	15	8.0
Marks Creek	344	25	12S	19E	4540	2-28	18.3	5.2	6.6	7.7	13	4.7
Ochoco Meadows	341	21	13S	20E	5200	2-28	35.5	11.9	12.0	14.4	15	9.7
Olive Lake	245	14	9S	33½E	6000	2-26	51.7	15.4	16.8	25.2	15	16.7
Schoolmarm	248	28	4S	34E	4775	2-28	15.0	4.6	- -	- -	4	3.9
Starr Ridge	247B	20	15S	31E	5150	3-3	24.6	5.3	5.3	9.0	15	5.7
CROOKED RIVER												
Marks Creek	344	25	12S	19E	4540	2-28	18.3	5.2	6.6	7.7	13	4.7
Ochoco Meadows	341	21	13S	20E	5200	2-28	35.5	11.9	12.0	14.4	15	9.7
Tamarack	342	8	15S	25E	4800	2-26	20.8	6.7	7.1	8.7	8	5.9
DESCHUTES RIVER												
Cascade Summit	321	7	23S	6E	4880	3-4	101.4	34.5	42.0	40.3*	6	29.3
Clear Lake	361	29	4S	9E	3500	2-24	39.0	14.9	23.3	31.5	9	12.0
Chemult	834	21	27S	8E	4760	2-28	37.7	14.7	13.4	13.7	14	10.4
New Dutchman Flat	324A	21	18S	9E	6400	3-1	140.5	53.9	52.3	61.6	4	46.6
Hogg Pass	351	24	13S	7½E	4755	3-2	112.6	44.3	50.4	70.9	10	37.8
Three Creeks Meadows	331	3	17S	9E	5600	3-1	68.9	23.8	26.0	30.7	4	19.6
Windigo Pass	744	20	25S	6E	5800	2-27	123.2	42.9	- -	- -	--	- -
Willamette Pass	323	21	24S	5½E	5600	3-3	109.2	37.1	- -	- -	--	- -
HOOD RIVER												
Greenpoint Reservoir	433	28	2N	9E	3400	3-1	37.5	*19.3	30.4	34.2	3	25.0
Red Hill	434	21	1S	9E	4400	3-4	104.5	*42.4	69.0	78.0	3	60.9
Tilly Jane-Mt. Hood	432	15	2S	9E	6000	2-25	120.8	*39.0	53.8	66.9	3	50.6

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WILLAMETTE VALLEY STREAMS												
SANDY RIVER												
Clear Lake	361	29	4S	9E	3500	2-24	39.0	14.9	23.3	31.5	9	12.0
Phlox Point-Mt. Hood	452	6	3S	9E	5600	2-28	138.8	*61.3	73.6	98.9	13	52.0
Still Creek	451	25	3S	8½E	3700	2-28	68.7	*26.4	35.8	48.8	13	20.2
CLACKAMAS RIVER												
Clackamas Lake	592	35	5S	8½E	3400	2-27	48.2	16.1	23.8	30.0	10	14.1
Clear Lake	361	29	4S	9E	3500	2-24	39.0	14.9	23.3	31.5	9	12.0
Peavine Ridge	591	14&15	6S	7E	3500	3-2	55.1	19.8	31.6	37.9	13	15.8
SANTIAM RIVER												
Breitenbush	551	21	9S	7E	2325	2-27	14.0	4.3	- -	17.3	8	4.1
Hogg Pass	351	24	13S	7½E	4755	3-2	112.6	44.3	50.4	70.9	10	37.8
Marion Forks	553	28	11S	7E	2730	3-2	39.5	12.6	29.4	32.9	10	15.2
Santiam Junction	552	14	13S	7E	3990	3-2	64.5	24.7	37.2	44.6	10	21.2
McKENZIE RIVER												
Hogg Pass	351	24	13S	7½E	4755	3-2	112.6	44.3	50.4	70.9	10	37.8
McKenzie	531	35	15S	7½E	4800	Measurement Delayed			53.8	64.2	2	59.0
Santiam Junction	552	14	13S	7E	3990	3-2	64.5	24.7	37.2	44.6	10	21.2
MIDDLE FORK WILLAMETTE RIVER												
Cascade Summit	321	7	23S	6E	4860	3-4	101.4	34.5	42.0	40.3*	6	29.3
Champion	522	12	23S	1E	4500	3-1	54.1	17.9	36.6	46.9	12	22.1
Willamette Pass	323	21	24S	5½E	5600	3-3	109.2	37.1	- -	- -	--	- -

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COAST FORK WILLAMETTE												
Champion	522	12	23S	1E	4500	3-1	54.1	17.9	36.6	46.9	12	22.1
INTERIOR DRAINAGE												
SILVER LAKE												
Silver Creek	942	25&26	29S	13E	4900	2-26	13.2	3.9	2.8	3.8	11	2.8
CHEWAUCAN RIVER												
Mill Creek	922	1	34S	17E	6200	3-1	28.0	8.2	7.5	7.9	12	6.4
Quartz Mountain	811	2	38S	16E	5320	3-4	17.4	5.3	6.1	8.5	12	5.6
Summer Rim	841	15	33S	16E	7200	2-22	46.1	16.7	14.9	15.3	11	12.8
HARNEY BASIN												
Idylwild Camp	961A	33	20S	31E	5200	2-25	20.5	5.5	5.5	7.3	15	6.0
Izee Summit	964	28	16S	29E	5293	3-2	33.4	9.0	7.3	10.9	15	8.0
Lake Creek	136	10	16S	33½E	5120	2-26	36.7	10.6	9.4	12.7	12	10.2
Rock Spring	134	23	18S	32E	5100	2-25	19.7	5.0	5.6	8.6	15	6.5
Starr Ridge	247B	20	15S	31E	5150	3-3	24.6	5.3	5.3	9.0	15	5.7
Stinkingwater	135	33	21S	34E	4800	2-27	10.8	4.0	6.3	4.7	12	4.4
WARNER LAKE												
Camas Creek	911A	5	39S	21E	5720	2-27	36.7	12.1	8.3	12.8	7	8.3
GUANO LAKE												
Bald Mountain	Nev.	17	45N	21E	6720	3-1	15.5	4.0	1.1	5.0	11	3.5

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WEST COAST DRAINAGE												
UMPQUA RIVER												
Champion	522	12	23S	1E	4500	3-1	54.1	17.9	36.6	46.9	12	22.1
Diamond Lake	743	29	27S	6E	5315	2-28	63.1	24.0	21.5	29.8	22	16.5
Whaleback	7217	3	31S	2E	5140	3-2	77.0	26.8	38.4	40.2	3	34.5
Windigo Pass	744	20	25S	6E	5800	2-27	123.2	42.9	- -	- -	--	- -
ROGUE RIVER												
Althouse	7216	17	41S	7W	4400	3-1	8.7	2.1	12.6	8.2	12	5.0
Annie Spring	831	19	31S	6E	6018	3-1	122.5	44.4	36.9	45.0	17	36.3
Big Red Mountain	729	31	40S	1W	6500	3-2	68.5	19.4	22.4	- -	2	17.3
Billie Creek Div.	722	30	36S	5E	5300	Measurement Delayed			28.4	- -	18	21.5
Fish Lake	725	3	37S	4E	4865	3-1	22.2	8.6	17.1	- -	15	12.0
Grayback Peak	727	9	40S	5W	6000	2-28	49.7	14.0	24.9	28.3	9	16.9
Hobart Lake	7221	17	40S	3E	5010	3-1	19.2	5.4	6.5	9.8	3	5.8
Hyatt Prairie Res.	723	15	39S	3E	4900	2-28	22.8	6.4	9.8	15.4	18	9.8
Little Red Mountain	7210	25	40S	2W	6500	3-2	54.8	13.0	20.8	- -	2	16.7
Park Headquarters	858	8	31S	6E	6450	3-1	145.4	57.9	48.3	59.1	7	49.2
Scragg Mount. (Calif.)	7220	9	47N	10W	6200	Measurement Delayed			30.7	36.6	9	22.3
Seven Lakes #1	7211	3	34S	5E	6800	2-25	155.1	52.9	54.8	76.0[a]	5	49.7
Seven Lakes #2	7212	26	33S	5E	6200	2-26	104.8	37.9	38.5	54.6	5	39.7
Silver Burn	7219	30	30S	4E	3720	3-1	35.5	12.8	20.8	19.5	14	10.8
Siskiyou Summit	728	17	40S	2E	4630	2-26	10.6	3.7	9.8	12.4	15	6.0
South Fork Canal	7218	12	33S	3E	3500	3-1	T	T	8.8	11.1	14	4.1
Wagner Butte	7213	1	40S	1W	6900	3-2	35.5[a]	12.2[a]	16.1	20.6	13	14.1
Whaleback	7217	3	31S	2E	5140	3-2	77.0	26.8	38.4	40.2	3	34.5

a - Partly estimated

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KLAMATH LAKE BASIN												
Annie Spring	831	19	31S	6E	6018	3-1	122.5	44.4	36.9	45.0	17	36.3
Beatty 2/		22	36S	12E	4300	2-28	2.0	0.2	0.0	0.0	24	0.2
Billie Creek Divide	722	30	36S	5E	5300	Measurement Delayed			28.4	- -	18	21.5
Bly 101 Ranch 2/		22	35S	14E	4800	2-28	5.0	0.2	0.0	2.8	24	1.6
Chemult No. 1	834	21	27S	8E	4760	2-28	37.7	14.7	13.4	13.7	14	10.4
Chiloquin 2/		34	34S	7E	4187	2-28	0.0	0.0	0.0	4.1	21	1.5
Crowder Flat (Calif)		30	47N	11E	5200	3-1	10.6	2.1	1.7	6.9	10	3.2
Crystal 2/		26	34S	6E	4200	2-28	29.5	14.8	10.6	6.8	21	7.8
Fort Klamath 2/		22	33S	7½E	4150	2-28	11.2	3.9	2.4	4.5	24	3.8
Harriman Lodge 2/		3	36S	6E	4200	2-28	11.5	3.9	5.0	7.0	24	4.0
Hyatt Prairie Res.	723	15	39S	3E	4900	2-28	22.8	6.4	9.8	15.4	18	9.8
Kirk 2/		1	33S	7E	4533	2-28	17.0	5.5	6.9	7.0	23	6.1
Lake of the Woods #1	835	11	37S	5E	4960	2-28	23.6	10.2	13.1	11.4	14	8.2
Park Headquarters	838	8	31S	6E	6450	3-1	145.4	57.9	48.3	59.1	7	49.2
Quartz Mountain	811	2	38S	16E	5520	3-4	17.4	5.3	6.1	8.5	12	5.6
Summer Rim	841	15	33S	16E	7200	2-22	46.1	16.7	14.9	15.3	11	12.8
Sun Mountain	836	22	32S	7½E	5350	2-28	82.6	30.4	19.6	29.0	13	22.9
Yamsey 2/		20	31S	11E	4600	No Report			1.1	6.8	22	2.4
Seven Lakes #1	7211	3	34S	5E	6800	2-25	155.1	52.9	54.8	76.0[a]	5	49.7
Seven Lakes #2	7212	26	33S	5E	6200	2-26	104.8	37.9	38.5	54.6	5	39.7
Strawberry	837	4	40S	16E	5600	3-2	26.8	* 7.7	7.6	12.0	10	8.4
GOOSE LAKE BASIN												
Camas Creek	911A	5	39S	21E	5720	2-27	36.7	12.1	8.3	12.8	7	8.3
Quartz Mountain	811	2	38S	16E	5320	3-4	17.4	5.3	6.1	8.5	12	5.6
Strawberry	837	4	40S	16E	5600	3-2	26.8	* 7.7	7.6	12.0	10	8.4

a - Partly estimated

* - Telegraphic - Subject to minor revision

2 / - Water content determined by melting one measured sample (The Calif. Ore. Power Co.'s station)

OREGON SNOW SURVEYS, FEBRUARY, 1951 (Delayed Data)

DRAINAGE BASIN and SNOW COURSE	LOCATION Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	Water Content (Inches) 1951	Same Approx. Date 1950	Same Approx. Date 1949	Past Record Years of Record	Past Record Av. Water Content (Inches)
HOOD RIVER												
Greenpoint Res.	433	28	2N	9E	3400	1-31	39.5	14.3	29.0	24.9	3	20.4
Red Hill	434	21	1S	9E	4400	2-4	96.4	39.2	45.8	73.5	3	47.6
KLAMATH BASIN												
Gerber Dam	839	12	39S	13E	4850	2-7	6.1	2.9	2.8	- -	1	2.8
GRANDE RONDE												
Schoolmarm	248	28	4S	34E	4775	2-2	17.0	3.9	- -	- -	3	2.0
JOHN DAY												
Schoolmarm	248	28	4S	34E	4775	2-2	17.0	3.9	- -	- -	3	2.0

The following organizations cooperate in the Oregon snow survey work:

STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and corps of State Watermasters
- Oregon State Highway Engineers

FEDERAL

- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Indian Service
  - National Park Service
- War Department
  - Army Engineer Corps

PUBLIC UTILITIES

- California-Pacific Utilities Company
- Portland General Electric Company
- The California Oregon Power Company

MUNICIPALITIES

- City of Baker
- City of Corvallis
- City of LaGrande
- City of The Dalles

IRRIGATION DISTRICTS

- Associated Ditch Companies
- Central Oregon Irrigation District
- Deschutes County Municipal Improvement District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users Incorporated
- Medford Irrigation District
- Ochoco Irrigation District
- Rogue River Irrigation District
- Talent Irrigation District
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS

- Amalgamated Sugar Company
- South Wasco Soil Conservation District
- The Crag Rats-Hood River-Oregon

Federal - State - Private

COOPERATIVE SNOW SURVEYS

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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"